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ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GR--ETC F/G 6/20
TOPICAL HAZARD EVALUATION PROGRAM OF CANDIDATE INSECT REPELLENT--ETC(U)

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**UNITED STATES ARMY
ENVIRONMENTAL HYGIENE
AGENCY**

ABERDEEN PROVING GROUND, MD 21010

6 TOPICAL HAZARD EVALUATION PROGRAM OF CANDIDATE INSECT REPELLENTS,
AI3-37427a, AI3-37436a,
AI3-37437a, AI3-37439a, AI3-37440a, AI3-37441a, AND AI3-37442a
USDA PROPRIETARY CHEMICALS,
STUDY NUMBERS 75-51-0133-79, 75-51-0138-79, 75-51-0139-79,
75-51-0140-79, 75-51-0141-79, 75-51-0142, AND 75-51-0143-79
SEPTEMBER 1978-JUNE 1979.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Preliminary hazard evaluations of AI3-37427a, AI3-37436a, AI3-37437a, AI3- 37439a, AI3-37440a, AI3-37441a, and AI3-37442a were performed by means of laboratory animal studies using New Zealand White rabbits. The technical grade compounds produced moderate primary skin irritation, but no eye irritation.		

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U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

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584-3980

17 AUG 1979

HSE-LT-T/WP

SUBJECT: Topical Hazard Evaluation Program of Candidate Insect Repellents
AI3-37427a, AI3-37436a, AI3-37437a, AI3-37439a, AI3-37440a,
AI3-37441a, and AI3-37442a, USDA Proprietary Chemicals, Study Nos.
75-51-0133-79, 75-51-0138-79, 75-51-0139-79, 75-51-0140-79,
75-51-0141-79, 75-51-0142-79, and 75-51-0143-79, September 1978 -
June 1979

Executive Secretary
Armed Forces Pest Control Board
Forest Glen Section, WRAMC
Washington, DC 20012

A summary of the pertinent findings and recommendations of the inclosed report follows:

Preliminary hazard evaluations of AI3-37427a, AI3-37436a, AI3-37437a, AI3-37439a, AI3-37440a, AI3-37441a, and AI3-37442a were performed by means of laboratory animal studies using New Zealand White rabbits. The technical grade compounds produced moderate primary skin irritation, but no eye irritation. It was recommended that all seven compounds not be approved for further testing as candidate insect repellents. If, however, any of these compounds show a significant improvement in pest repellent properties over currently available compounds, it is suggested that they be resubmitted in their proposed use formulations and/or concentrations.

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Accession For	AI3-37427a	AI3-37436a	AI3-37437a	AI3-37439a	AI3-37440a	AI3-37441a	AI3-37442a
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U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

HSE-LT-T/WP

TOPICAL HAZARD EVALUATION PROGRAM OF CANDIDATE INSECT REPELLENTS
AI3-37427a, AI3-37436a,
AI3-37437a, AI3-37439a, AI3-37440a, AI3-37441a, AND AI3-37442a
USDA PROPRIETARY CHEMICALS
STUDY NUMBERS 75-51-0133-79, 75-51-0138-79, 75-51-0139-79,
75-51-0140-79, 75-51-0141-79, 75-51-0142, AND 75-51-0143-79
SEPTEMBER 1978-JUNE 1979

1. AUTHORITY.

a. Letter, US Department of Agriculture - Agricultural Research Service, Southern Region, Insects Affecting Man and Animal Research Laboratory, Gainesville, Florida, 13 September 1978.

b. Memorandum of Understanding between the US Army Environmental Hygiene Agency; the US Army Health Services Command; the Department of the Army, Office of The Surgeon General; the Armed Forces Pest Control Board; and the US Department of Agriculture, Agricultural Research, Science and Education Administration; titled, Coordination of Biological and Toxicological Testing of Pesticides, effective 23 January 1979.

2. REFERENCE. Toxicology Division Procedural Guide, USAEHA, 1972, revised 1976.

3. PURPOSE. The purpose of this program is to provide guidance for further entomological testing of the candidate insect repellents AI3-37427a, AI3-37436a, AI3-37437a, AI3-37439a, AI3-37440a, AI3-37441a, and AI3-37442a.

4. SUMMARY OF FINDINGS. Hazard evaluations of the candidate repellents AI3-37427a, AI3-37436a, AI3-37437a, AI3-37439a, AI3-37440a, AI3-37441a, and AI3-37442a, USDA proprietary compounds, were conducted by this Agency using New Zealand White rabbits for skin and eye studies. A tabular presentation of animal toxicity data developed in this Agency follows:*†

* In conducting the studies described in this report, the investigators adhered to the "Guide for the Care and Use of Laboratory Animals," US Department of Health, Education, and Welfare Publication No. (NIH) 74-23, revised 1978.

† The experiments reported herein were performed in animal facilities fully accredited by the American Association for the Accreditation of Laboratory Animal Care.

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Topical Hazard Eval Study No. 75-51-0133-79, 75-51-0138-79, 75-51-0139-79, 75-51-0140-79, 75-51-0141-79, 75-51-0142-79-79, and 75-51-0143-79, Sep 78-Jun 79

TABULAR PRESENTATION OF DATA

Test	Results	Interpretation
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SKIN IRRITATION STUDIES

Rabbits

Single 24-hour application to intact and abraded skin of New Zealand White rabbits.	Compounds AI3-37427a, AI3-37436a, AI3-37437a, AI3-37439a, AI3-37440a, AI3-37441a, and AI3-37442a produced moderate primary irritation in both intact and abraded skin on all six rabbits.	USAEHA Category III (ref Appendix)
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0.5 ml technical grade compound applied to each of six rabbits.

EYE IRRITATION STUDIES

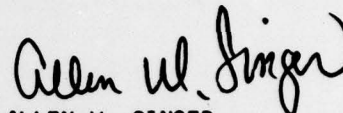
Rabbits

Single 24-hour application of 0.1 ml technical grade compound to one eye of each of six New Zealand White rabbits.	All seven compounds did not produce any injury to the cornea, and, in addition, no injury to the conjunctiva in 6 out of 6 rabbits.	USAEHA Category A (ref Appendix)
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5. CONCLUSION. The technical grade compounds caused moderate primary skin irritation in rabbits and do not qualify as nonhazardous candidate insect repellents.

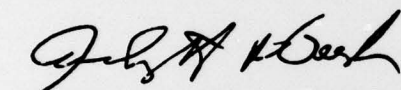
Topical Hazard Eval Study No. 75-51-0133-79, 75-51-0138-79, 75-51-0139-79,
75-51-0140-79, 75-51-0141-79, 75-51-0142-79-79, and 75-51-0143-79, Sep 78-Jun 79

6. RECOMMENDATIONS. Under the provisions of the Memorandum of Understanding (paragraph 1b), it is recommended that AI3-37427a, AI3-37436a, AI3-37437a, AI3-37439a, AI3-37440a, AI3-37441a, and AI3-37442a not be approved for further testing as candidate insect repellents. If, however, any of these compounds show a significant improvement in pest repellent properties over currently available compounds, it is suggested that they be resubmitted in their proposed use formulations and/or concentrations.



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Topical Hazard Eval Study No. 75-51-0133-79, 75-51-0138-79, 75-51-0139-79, 75-51-0140-79, 75-51-0141-79, 75-51-0142-79, and 75-51-0143-79, Sep 78-Jun 79

APPENDIX

TOPICAL HAZARD EVALUATION PROGRAM DEFINITIONS OF CATEGORIES OF COMPOUNDS BEING CONSIDERED FOR ACUTE SKIN APPLICATION

CATEGORY I - Compounds producing no primary irritation of the intact skin or no greater than mild primary irritation of the skin surrounding an abrasion. (INTERPRETATION: No restriction for acute application to the human skin.)

CATEGORY II - Compounds producing mild primary irritation of the intact skin and the skin surrounding an abrasion. (INTERPRETATION: Should be used only on human skin found by examination to have no abrasions or may be used as a clothing impregnant.)

CATEGORY III - Compounds producing moderate primary irritation of the intact skin and the skin surrounding an abrasion. (INTERPRETATION: Should not be used directly on the skin without a prophetic patch test having been conducted on humans to determine irritation potential to human skin. May be used without patch testing, with extreme caution, as clothing impregnants. Compound should be resubmitted in the form and at the intended use concentration so that its irritation potential can be reexamined using other test techniques on animals.)

CATEGORY IV - Compounds producing moderate to severe primary irritation of the intact skin and of the skin surrounding an abrasion and, in addition, producing necrosis, vesiculation, and/or eschars. (INTERPRETATION: Should be resubmitted for testing in the form and at the intended use concentration. Upon resubmission, its irritation potential will be reexamined using other test techniques on animals, prior to possible prophetic patch testing in humans, at concentrations which have been shown not to produce primary irritation in animals.)

CATEGORY V - Compounds impossible to classify because of staining of the skin or other masking effects owing to physical properties of the compound. (INTERPRETATION: Not suitable for use on humans.)

EYE CATEGORIES:

A. Compounds noninjurious to the eye. INTERPRETATION: Irritation of human eyes is not expected if the compound should accidentally get into the eyes, provided it is washed out as soon as possible.

B. Compounds producing mild injury to the cornea. INTERPRETATION: Should be used with caution around the eyes.

C. Compounds producing mild injury to the cornea, and in addition some injury to the conjunctiva. INTERPRETATION: Should be used with caution around the eyes and mucosa.

D. Compounds producing moderate injury to the cornea. INTERPRETATION: Should be used with extreme caution around the eyes.

E. Compounds producing moderate injury to the cornea, and in addition producing some injury to the conjunctiva. INTERPRETATION: Should be used with extreme caution around the eyes and mucosa.

F. Compounds producing severe injury to the cornea and to the conjunctiva. INTERPRETATION: Should be used with extreme caution. It is recommended that use be restricted to areas other than the face.